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AZ CORP COMMISSION
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IN THE MATTER OF THE INVESTIGATION)
OF REGULATORY AND RATE INCENTIVES))
FOR GAS AND ELECTRIC UTILITIES)

Docket Nos. E-00000J-08-0314
G-00000C-08-0314

Notice of Filing Supplement to
Testimony of Michael A. Curtis
Given at March 27, 2009 Energy
Efficiency Workshop

The Arizona Municipal Power Users' Association ("AMPUA") by through its
Executive Secretary, Michael A. Curtis, delivered to the Commissioners and Staff the attached
documents at the March 27, 2009 Energy Efficiency Workshop as part of the testimony of
Michael A. Curtis and it is hereby formally filed in the above-numbered docket.

Respectfully submitted this 31st day of March, 2009.

CURTIS, GOODWIN, SULLIVAN,
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By

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**American Public Power Association
Response to FERC's Staff Discussion Draft
On Possible Elements of a National Action Plan on Demand Response
March 12, 2009**

Excerpts from the FERC Staff Discussion Draft are in italics. APPA's response is in regular type. The Discussion Draft asked for comments on four major issues: Scope of the National Action Plan and three numbered items under Plan Elements Needed to Implement Objectives: (1) National Communications Program; (2) Development of Tools and Materials; and (3) Assistance to States and Key Stakeholders.

Note that APPA adopts official policy positions through the passage of resolutions by its membership. APPA has no adopted resolutions on the FERC Staff Discussion Draft or the subjects raised by it. *This paper therefore should not be considered an official APPA policy position*, but rather the views of the APPA members and staff that contributed to its drafting in response to FERC Staff's request for input.

Scope of the National Action Plan

Staff seeks input on the following questions about the scope and content of the National Action Plan.

- *The National Action Plan will articulate a strategic vision and goals for achieving optimal levels of demand response. What should be the strategic vision and goals of the National Action Plan? Should these visions and goals be specified at the national, regional and state-level with workable timetables? Should the vision and/or goals be specified at near-, mid-, and long-term?*

The plan's vision and goals should be defined at a relatively high level and not include prescriptive or overly-detailed actions. Establishing high level goals provides for more flexible implementation and allows for potential changes in the program in response to unforeseen events. The high level concept is also in line with the goal and recommendations established by the National Action Plan on Energy Efficiency (NAPEE). APPA believes that the NAPEE effort would be a good model that could be followed in developing the National Action Plan on Demand Response (NAPDR).

The vision for the NAPDR should be to create a sustainable, national commitment to achieving the optimal, cost-effective level of demand response required to improve reliability, reduce peak demand, and over the long-run, hopefully reduce overall usage as well. Goals should include: encouraging the use of time-based pricing, developing a communication and education strategy, helping utilities make a business case for demand response, and providing stable program funding for implementation of demand response measures.

Advocating time-based pricing as the general pricing standard should be a centerpiece of the plan.¹ The Discussion Draft juxtaposes incentive-based programs and time-based programs in a way that gives them equal footing, but time-based retail rate regimes should be given primary emphasis. Among other things, properly designed time-based programs would preclude the need for some incentive-based programs.² The simplest way to induce lower electricity use at times of high wholesale market prices is to charge prices that reflect the real cost of electricity usage at that time. Prices are still reflective of costs; it is only that the structure of prices is different than traditional practice in order to reflect the underlying time-varying costs of electricity in prices.

- *The National Action Plan will include actions to address barriers and maximize the full potential of demand response. Which of the following actions should be included; what actions are missing or in need of modification?*
- *For any action item, please: specify what actions would be required at the national, regional, state, and utility level to implement the action; identify any specific Federal or state regulatory changes that would be required; and address whether they can be done in the near-, mid- or long-term.*
 - *Recommend that Congress legislate mandatory nationwide real-time retail pricing for electricity;*

The establishment of time-based pricing (as discussed above) as the standard for pricing retail electricity should be a centerpiece of the NAPDR. FERC should not, however, recommend that Congress legislate mandatory real-time retail pricing. Utilities and their state and local regulators are in the best position to determine the best way to implement time-based rates, and the timetable for doing so. Not all time-based pricing programs require the large investment in meters and other infrastructure needed to implement "real time" pricing. Given the substantial capital expense of installing "smart meter" distribution infrastructure, and the current strained financial circumstances of many utilities, it may make the most economic sense to implement some form of time-based rates using existing infrastructure, and then move to upgrade distribution metering infrastructure when it is more cost-effective to do so (and when it is clearer what standard protocols will be used). This is particularly important for public power utility systems that cannot afford to invest in "bleeding edge" technology that turns out not to be compatible with the eventual industry standard. Because public power systems are

¹ APPA has long supported time-based rate designs that show retail customers the economic costs resulting from their consumption decisions at the time they choose to consume. However, APPA's support for time-based rates does not mean that APPA supports the direct pass-through of wholesale power prices in RTO-run centralized markets to retail customers when the prices those markets produce are not just and reasonable. For the reasons stated in APPA's comments and rehearing application filed in FERC Docket Nos. RM07-19-000, APPA does not believe that these wholesale rates are just and reasonable.

² For example, it makes little sense to have customers pay prices that are well below the cost of providing service at various times – and consider the consumption patterns during these periods "normal" for purposes of establishing baseline consumption levels – and then turn around and pay retail customers an "incentive" for reducing their consumption. The better solution is to charge prices more closely aligned with costs in the first place.

consumer-owned, there is no separate class of shareholders to absorb costs associated with such expensive technology upgrades that in retrospect do not necessarily seem wise.

Real-time pricing (RTP) might be the conceptual ideal, but there are other more practical ways to implement time-based rates that still achieve significant results. For example, an effectively-designed time-of-use (TOU) pricing program with 12 or 16 pricing periods and a critical peak pricing (CPP) component should compare favorably – in terms of efficient production and consumption of electricity – with an RTP program with prices changing every hour. The important difference is that the smart grid infrastructure necessary for a RTP program is not needed for the simpler TOU pricing.

In some regions of the country, the range of fluctuation in hourly costs may not be sufficient to justify RTP meters. (For example, in the heavily hydro-based Pacific Northwest region, there are only relatively small differences between peak and off-peak costs.) Plus, utilities take other uses and factors into consideration when purchasing meters, and this argues against a national mandate that effectively requires installation of RTP meters to support real-time pricing.

- *Provide for federal tax incentives or grants for state-directed programs requiring electric utilities to deploy the elements of the smart grid that support demand response, such as smart meters, smart appliances, home area networks, and capabilities for full two-way exchange of information;*

APPA would oppose state or federal programs *requiring* electric utilities to deploy smart grid elements. Smart grid investments may not in fact be the most beneficial investment for some utilities. Such state and federal programs should focus on ways to advance and support such deployments, rather than mandating them.

This proposal also appears to limit participation to advanced metering infrastructure (AMI) technologies that have full two-way exchange of information. Support should also be provided for one-way communication from the utility to the customer through automatic meter reading (AMR), which can be a beneficial – and cheaper – alternative for many utilities. Utilities can use the data from AMR to design effective TOU programs that assist in the overall goal of peak-load shifting. The use of radio-communication and internet devices is another less-costly way for smaller utilities to implement effective DR programs.

APPA does support financial assistance programs for state or local initiatives that encourage electric utilities to deploy technologies that support demand response. Any financial program should be available to all utilities. In this regard, FERC should be aware that not-for-profit utilities such as public power and cooperative systems cannot employ tax credits, because of their not-for-profit business model. If tax incentives are provided for taxable entities such as investor-owned utilities, fully comparable incentives must be offered to public power and cooperative utilities. Otherwise, FERC would be proposing a regime that favors for-profit utilities.

- *Direct federal, state and local governments to meet specified and aggressive demand reduction goals or standards, and to work with*

electric utilities and demand response providers and to achieve these targets; and

This action item is too prescriptive. State and local governments, regulators, and utilities responsible for implementing programs are in the best position to determine the most effective ways to implement DR programs, given their specific circumstances. If a federal entity "directs" state and local governments to meet demand reduction goals and targets, but does not supply the necessary funds, then this directive is nothing less than an unfunded mandate. Imposing such a mandate is more likely to result in litigation than in cooperation. Moreover, given the current state of the economy, many state and local governments would be hard pressed to implement aggressive demand reduction goals or standards in the absence of accompanying federal government funds. Finally, this proposal is especially inappropriate given that many state and local governments are well along in implementing their own demand response initiatives.

- *Require the incorporation of demand response technologies into appliance standards, building and energy codes, and green building standards (e.g., smart thermostats, information display units that provide transparent access to usage information, and the ability to fully automate customer response to prices and notifications from system operators).*

APPA agrees that incorporating demand response technologies into appliances and buildings is an important step that needs to be fully evaluated. Installation of smart grid meter infrastructure may be a less than optimal investment if the appliances cannot "talk" to the meters. However, it would be wise to start with selected standards and pilot programs to ensure that security questions are resolved and the higher expense of the appliances is warranted and acceptable to consumers.

Plan Elements That May be Needed to Implement the National Action Plan's Three Objectives

1. National Communications Program

- *National Demand Response Mass Media Marketing Campaign with Local and State-Tailored Components* – *One element of the national communications program could include a national demand response mass media marketing campaign. The campaign would seek to develop easily understood messages to spread awareness and tout the benefits of participating in demand response programs. The messages would be clear and specific, based on an understanding of the audiences, and be crafted to increase awareness and elicit behavioral change. Possible mass media outlets could include television, radio, outdoor advertising, and the internet. The campaign could also include the dissemination of educational materials available in print and online. The campaign would be implemented by an appropriate federal agency, subject to Congressional funding, and could leverage the support of public service advertising such as the Ad Council.*

While the campaign would be national in scope, further financial and technical assistance could be provided to tailor the communications program to the specific needs of individual states and localities. By definition, demand response programs require changes in electricity consumption patterns from end-use customers. Thus, in order to achieve greater customer involvement in demand response programs, there is a substantive need to educate potential customers of the opportunities to participate. Therefore, the state-tailored communications efforts may need to name explicitly the specific demand response program or programs that are available to each area's customers from their local utility or curtailment service providers, or in the case of large customers, their regional transmission organization.

Many utilities have already developed or are developing and rolling out consumer education materials for DR programs. Rather than starting from scratch, any education initiatives should be based on lessons learned from existing programs. Examples in the public power community include consumer education materials used by Milton Hydro (Province of Ontario), Salt River Project (Ariz.), and the Groton (Mass.) Electric Light Department for their time-based pricing programs.

Links to sample consumer education material

Milton Hydro's interactive Web tool – click along the “more info” section for a description of the TOU program; click on the house to choose appliances and see the cost of using the appliance at different hours:

<http://www.ieso.ca/house/miltonhydro/>

Groton Electric Light Department's newsletters introducing TOU pricing:

<http://grotonelectric.org/pdf/Groton%2010-01-08.pdf>

<http://grotonelectric.org/pdf/Groton%2001-01-09.pdf>

Salt River Project's Web site explaining TOU plan and comparing it with basic plan:

<http://www.srpnet.com/prices/home/Tou.aspx>

- *Supplemental Communications Strategy – Another possible element of a communications program—which could supplement a mass media marketing campaign—would be the development of relationships between those offering demand response programs to customers and various customer classes such as large commercial and industrial customers. A more customer-focused outreach and education program could be crafted to create partnerships and work directly with those groups, individuals, or geographic regions that will have the greatest impact. This would be a more labor intensive process.*

This proposed element of the communications strategy seems largely unnecessary and potentially expensive. The large commercial and industrial customers targeted by this program are those that are already most likely to be aware of the potential benefits of DR programs.

- *Integrated Energy Efficiency and Demand Response Strategy* – A third possible element of a national communications program could be to merge promotion of demand response with the promotion of energy efficiency. Currently, the Department of Energy and the Environmental Protection Agency, jointly market energy conservation under the “Energy Star” program. Energy efficiency and demand response both target changes in customer energy use patterns. The development of an integrated communications strategy for demand response and energy efficiency may be beneficial, and could leverage existing energy efficiency activities and reduce the potential for competing messages and communications. Such a program could build upon the successes of current public, private and non-profit communications campaigns that have been successful in raising broad awareness of the benefits to the nation, the environment, and the customer of reducing energy demand at peak times. The implementing agency could work in collaboration with existing energy efficiency organizations to develop a comprehensive message leading customers to take action and alter their energy use patterns. Certain utilities are already offering an integrated approach to demand side management by bundling demand response programs and energy efficiency practices to help customers maximize energy savings. Discussing and presenting unified demand side program options can limit confusion amongst customers and minimize the number of disparate, but related energy reduction messages. Some have suggested that customers respond better to a demand response program marketed under an “energy efficiency” label than under the unfamiliar “demand response” label.

APPA endorses integrating the promotion of DR together with existing programs to promote energy efficiency (EE) as the major element in the NAPDR communication strategy. Rather than starting from scratch, the NAPDR should build on the established NAPEE’s Energy Star resources. As noted in the FERC Discussion Draft, the public has difficulty in distinguishing between DR and EE, and many utilities are already offering an integrated DR-EE approach. Building on Energy Star – and potentially other energy efficiency organizations – will give the biggest bang for the buck, eliminate the sometimes artificial differentiation between DR and EE, and help utilities present customers with a unified message. In addition, it will be the quickest way to reach customers and utilities that are already familiar with the Energy Star Web site.

APPA notes that implementation of carbon emission controls may well increase the importance of EE. It may well become the lowest cost “resource” in the stack in many cases. This underscores the importance of fostering both DR and EE.

2. *Development of Tools and Materials to Support Demand Response*

APPA has used resources developed through the NAPEE program to educate public power utilities on EE issues. The NAPDR program should consider some of the same delivery mechanisms. The Webinars, in particular, were very useful for smaller utilities and utilities that had not yet implemented EE programs.

- *Cost Effectiveness Tools – Developing easy-to-use tools which allow retail electricity customers to assess the likely financial benefits of participating in a demand response program may increase their willingness to participate. For utilities and states, tests to determine the cost-effectiveness of implementing demand response programs would be useful. Some tests assess the long-term value and return on investment of such programs. Although methods for evaluating demand-side management programs have been in use for many years, tailoring these methods or developing new methods for demand response programs may be beneficial.*

APPA recommends expansion of this item beyond tools for residential customers. Serious discussion should be aimed at providing tangible tools for both customers (residential, commercial and industrial) and providers. Customers need a tangible tool they can easily manipulate to “see” DR benefits. It would be very useful for such customers to have an energy calculator that functions like a gas pump so that rate payers can see their energy savings. Utilities also need a tool so that they can easily compare and convey the increased benefits of DR under TOU or RTP pricing regimes, as compared to traditional retail pricing structures. Such tools will have to allow for customization by local utilities to make them applicable to the customers of those individual utilities.

Utilities also need more information on different rate design options based on time-of-use costs. Time-based programs have been around for decades, but more research is needed on the optimal rate design for recovering costs and sending appropriate price signals to retail customers. The goal is to have the prices in the designated time-of-use periods more closely reflect the underlying time-varying costs. This most likely would necessitate a few more time-of-use periods than are typically found in utility TOU pricing programs. There is clearly a trade-off between simplicity of rate design and effectiveness in sending accurate price signals. Additional research could lead to the development of more effective TOU pricing programs that approximate this “sweet spot.”

- *Measurement and Verification Tools – Tools to measure and verify load reductions could enhance reliance on demand response as a resource. Both demand response program operators and participants require accurate measurement of demand reductions. For operators, verifying that demand response resources actually provide the intended reduction in demand when called upon is essential for demand response to grow as a resource as well as to ensure electric power system reliability. For program participants, measurement of load reduction is necessary for purposes of billing and ensuring appropriate compensation. Central to measurement and verification is knowing the amount of electricity that a customer would have consumed if it had not engaged in load reductions.*

Measurement and verification tools are absolutely required if demand response is to be sold in wholesale markets and relied upon by operators as a resource equivalent to generation. APPA is aware of issues raised in certain RTO markets regarding “phantom” demand response, and the need for RTOs to address these problems.

- *Communication Standards for Consumer Demand Information – Such protocols would allow information on electricity demand to flow unimpeded from consumers to utility (and/or third-party demand response aggregator), and to wholesale market operators.*

Communications standards must address the issue of cyber-security. The more devices that are "communicating" with each other, the greater the potential vulnerability.

FERC should review the Load Management Standards proceedings and work underway by the California Energy Commission (CEC), as the CEC is close to proposing or adopting a number of technical standards and requirements for metering, communications, and functionality. APPA is not specifically endorsing the CEC standards. However, a review of the CEC process (which included assistance from EPRI) and the CEC results could be useful.

The NAPDR should also include consideration of radio broadcast of real-time pricing and/or demand response notifications, which can be a very low-cost method of broadcasting data to customers (and their radio-enabled devices). A national standard in this area could lead to rapid and low-cost penetration of appliances that could respond to signals from local utilities or RTOs without the need for expensive AMI and associated communications infrastructure on a utility-by-utility basis.

Another alternative is being explored by Jacksonville Electric Authority (JEA). The utility is examining the use of customers' existing in-home wireless internet networks to control thermostats, water heaters and pool heaters, while it continues to explore a smart grid installation. Such innovative ideas could be taken off the table if FERC proposes too prescriptive an approach to demand response, which is why APPA is advocating for greater flexibility in implementation.

The smart grid concept is a particularly vexing problem for forward-thinking utilities that are trying to develop DR programs today, as it is unclear which (if any) of the popular demand reduction products or vendors will easily integrate into a broader smart grid program. Thus, many utilities (like JEA) are waiting for the picture to clear a bit. Establishing national "open" standards for DR functionality and communications protocols would help alleviate some concerns; hence, development of such standards is an important activity that the NAPDR should support. It would also help promote joint initiatives that can reduce the cost to individual utilities of investing in new technologies.

For example, members of the Iowa Association of Municipal Utilities are currently studying a proposal to provide load control using a shared file server that would control switches and thermostats remotely using 900-MHz radio frequency signals. The utilities would purchase and install the switches or thermostats. Through joint action, participating utilities would not have to invest in computers, software, or the training necessary to operate the load management system. Marketing programs could also be undertaken jointly. Installation of smart grid thermostats could be phased in because the control technology is shared, and price breaks for quantity purchases of switches and thermostats would be attained through aggregation. There is also a potential for shared revenue from the demand response market; this revenue could be invested in additional demand response or energy efficiency initiatives.

FERC should also encourage utilities to provide a broad variety of tools to help customers better understand their usage and the impacts of their consumption at a particular time on the utility. Such tools do not necessarily require implementation of full real-time pricing. For example, Tacoma Power is currently conducting a pilot under which approximately 500 customers are using an in-home device that shows them near real-time information about their usage and the amount of overall utility usage and cost data at that time. Tacoma Power's preliminary experience with customer usage of these devices is that customers do respond to such information.

- *Lessons Learned from Existing Demand Response Pilot Projects – An appropriate summary or analysis of the lessons learned from demand response pilot projects should be useful to all those interested in starting a new program. Such a summary would draw from the many demand response pilot projects that have been, or are being, conducted nationwide and should document both successes as well as problems that were encountered.*

APPA supports this proposal. Guidelines and databases of case studies, best practices, and lessons learned would be very useful for utilities designing new programs or revising existing programs. The database need not be limited to pilot programs.

Best practices and lessons learned can promote more standard program designs, and this would be helpful to commercial and industrial customers that have facilities in different utility service territories. Program participation can be inhibited by significant variations in programs and tariffs across service territories.

- *Model Regulatory Provisions and State Laws Enabling Demand Response – A compendium of model state laws and regulations or a list of features of a good law or regulation that draws from the best aspects of existing laws and regulations may be useful to states. Either of these could assist states seeking to develop a new demand response program.*

APPA supports this proposal.

- *Model Retail Tariffs Enabling Demand Response – Model retail tariffs that are easy for customers to understand may help encourage participation in demand response programs. States, utilities, and customers could benefit from a model retail demand response tariff, based on tariffs that have proved effective elsewhere.*

APPA supports this proposal.

- *Cost Recovery Methods for Enabling Technology – Methods for recovering the costs of new technologies that enable demand response, and an assessment of the effect of each method on customer rates, could assist utilities and state officials considering demand response programs. For example, devices such as advanced meters and smart thermostats are essential for some demand response programs and can greatly increase the effectiveness of other demand response programs.*

However, the installation of these devices requires investment from load serving entities and an appropriate method for recovering their costs.

APPA supports this proposal. As previously discussed, however, there should also be consideration of whether enabling technology is cost-effective, provides measureable results, and hence should be adopted in the first instance. It would be helpful for the NAPDR to include in its suite of tools methods and programs for evaluation of the costs and benefits of such enabling technology. APPA is quite concerned about investments that prove obsolete quickly due to lack of standardized protocols and changes in technology. Regardless of whether ratepayer or federal stimulus (taxpayer) monies are used to invest in these technologies, utilities have the obligation to spend these dollars wisely.

- *Web-based Clearinghouse for Information on Demand Response – The design, construction and support of a web-based clearinghouse for retail customers to find more information on demand response may increase customers' ability to participate. Website content could include a database of demand response programs by location, as well as potential contractors or vendors providing enabling technology and devices that support demand response.*

A Web-based clearinghouse for retail customers would be useful and could be modeled after the EE program offerings on the Energy Star Web site.

- *Issue Papers on Controversial Topics – Issues papers by well-qualified and respected analysts could increase understanding and help build consensus on difficult issues confronting the deployment of demand response. We provide two examples below but seek comment on other issue areas that should be explored.*

APPA does not support the NAPDR sponsoring issue papers on controversial topics. It is difficult – and often impossible – to find knowledgeable, neutral parties on controversial topics, which, almost by definition, lead to strong pro or con positions. Thus, the issue papers are likely to be “position” papers promoting a specific viewpoint and unlikely to help build any effective consensus position. NAPDR sponsorship of such papers might be misconstrued as an endorsement of particular positions on issues, which could be misused by third parties. It would be better to focus on the benefits and positive attributes of DR, rather than to support or foster controversy. APPA also notes that in the case of not-for-profit utilities, loss of “profits” from implementation of DR is not an issue, although recovery of system costs is a concern.

- Decoupling electricity revenues from sales in retail markets. Traditional retail electric revenues and profits increase with electricity sales. This can create disincentives for utilities to promote programs that reduce electric demand. To address this disincentive, policies that “decouple” changes in utility revenue from changes in sales volume have been adopted in some states. An evaluation of these decoupling policies, with particular attention to their application to demand response programs and investments, may be useful to utilities and states considering demand response programs.

- *Valuing demand response. There is no consensus on the correct method for determining the value of demand response in wholesale or retail markets. There is an intense debate around what constitutes “fair compensation” versus what may be an “unnecessary subsidy”. Further development of suitable methods for incorporating and valuing demand response programs could greatly assist state and utility resource planning. A comparative analysis of various ways to assess these benefits may help utilities and their stakeholders to reach agreement on controversial issues.*

3. *Assistance to States and Other Key Stakeholders*

Much of the material offered in this section on assistance to states and other stakeholders is in line with recommendations included in the section on communications strategy or in the section on development of tools and materials. National conferences, regional workshops, and provision of demand response experts are all methods of implementing a communications strategy (section #1). Technical papers are basic materials to support demand response (section #2). APPA believes that only the Demand Response Assistance Program and the Demand Response Grant Program belong in this section (section #3).

- *National Conference – A national conference could be held for federal agencies, state public utility commissioners, state energy offices, gubernatorial offices, state legislators, state consumer counsels, utilities, and other key stakeholders. The conference could be a stand-alone one day session in Washington, D.C. or elsewhere, or could be a half-day conference that follows or precedes another national conference (e.g., National Association of Regulatory Utility Commissioners). The conference would be designed to provide an overall vision for key decision makers on demand response and provide an opportunity for them to share ideas, examine barriers, and explore solutions. It could also examine the complementary role of demand response in relation to other potential state initiatives such as climate change, energy efficiency, and customer satisfaction.*
- *Regional Workshops - Following the national conference, multiple regional workshops could be held, targeted to a broader set of state employees, regulators, and other stakeholders. The workshops may be more convenient for other interested retail regulators such as municipal city councils and rural cooperative boards. The objectives of the regional workshops would include those of the national conference but would also seek to coordinate and implement applicable actions proposed within the National Action Plan for meeting a goal of maximizing deployment of demand response. It could cover the benefits of demand response programs to the states and their electric customers, and present strategies for deployment. Additionally, the agenda could include topical sessions led by expert speakers examining various practical aspects of demand response implementation. In addition, periodic workshops or roundtables could be held to discuss progress in implementing demand response, to consider best practices,*

and to promote sharing of problems and solutions among officials responsible for implementing demand response.

Regional workshops are preferable to a national conference as they can yield greater value. Regional meetings can take into account specific regional characteristics of electricity markets and climate concerns, for example. It would also be easier for consumer representatives and not-for-profit entities to travel to a regional forum.

- *Provision of Demand Response Experts - An appropriate federal agency could compile a list of potential speakers on demand response topics, and offer to provide expert speakers at the meetings and conferences, in particular to those of state officials involved in development of electric policy (e.g., the National Council of State Legislatures, the National Association of Regulatory Utility Commissioners, and also perhaps the American Public Power Association and others). The speakers list could consist of demand response experts from existing demand response working groups, national laboratories, federal agencies, utilities, state agencies, and other stakeholder groups. The purpose of this program would be to help educate various constituencies about demand response programs and their benefits.*
- *Technical Papers - An appropriate federal agency, national laboratory or other entity could sponsor a series of informational, technical, research, or policy papers targeted to various practical aspects of demand response program implementation. The primary purpose would be to highlight questions that require new research to address barriers or obstacles to demand response.*

A program of technical papers should address issues of concern to different types of utilities (small vs. large, for example), and should provide practical advice rather than endorse a specific point of view or concept. APPA supports papers on improving rate design for time-based pricing and further research on the costs and benefits of smart grid technologies. (See APPA comments, below.)

Topics could include:

- *Best strategies to maximize deployment of demand response potential for states with specific programs or needs taking into account electric demand profile, generation mix, preferred type of demand response program, regional trends, stakeholder views, and previous assessment research*
- *Relative benefits of various types of demand response programs, covering such topics as which programs bring which types of benefits, potential costs, and payback horizons*
- *Exploration of issues related to rate design, metering costs, and an analysis of customer response to time-varying prices in successful programs*

APPA maintains that relatively simple time-based pricing programs can, in many instances, achieve much the same results as RTP programs, but at a lower cost and

with higher customer acceptance. Thus we support further research on effective rate design.

- *Advanced metering topics such as estimating initial costs, methods used to recover costs, calculating time to payback, and dealing with rapid product obsolescence due to rapid technology advancement.*

Utilities can use a variety of metering and technology solutions to help in designing rates that provide the proper signals to shift load during peak demand periods. This topic should be expanded to cover appropriate strategies for smaller utilities to consider the pros and cons of investing in new technologies and infrastructure. Smaller utilities generally have greater concerns with product obsolescence, given their limited funds, and so need to find the most cost-effective, long-term strategies to ensure that their investments provide net benefits.

- *Smart metering for residential customers, covering such topics as categories and characteristics of various smart metering systems, cost-effectiveness, setting up the communications and data base, customer awareness, access to data, retrofitting existing meter connections with smart technology, and consumer protections*

APPA members are particularly interested in the issues of cost-effectiveness, data access and security, customer privacy, and customer protections. Customers pay for large infrastructure investments through their rates, so public power utilities want to make sure that investments in new technologies will ultimately benefit those customers. These customers ultimately pay the costs of all public power investments; hence, public powers systems are obligated to be responsible stewards of their dollars.

Under some DR programs, customers give their utility control over select appliances in their homes. Smart grid advocates foresee utility control of a wide range of electric devices in the home. This raises two major concerns: (1) the security of smart grid networks, and (2) whether customers are willing to allow utilities "into their homes" to such an extent. Research should be done regarding customer acceptance of utility control of their appliances, and customer rights regarding the privacy of their information. As customer-owned utilities, public power systems are quite concerned about customer acceptance and "buy-in" of these activities.

- *Curtable load programs aimed at industrial customers, covering such topics as potential benefits to all customers, who pays for the program, rate design, and program marketing*
- *Implementation of demand response programs at government-owned campuses, covering such topics as the types of demand response programs suitable for government customer applications, barriers and lessons learned from existing programs (e.g., percentages of state electricity portfolio under municipal, county, state, and federal control; and potential impact of incorporating government loads into demand response programs)*
- *The relationship of demand response to other state energy initiatives (e.g., energy efficiency, renewable energy, smart grid, carbon trading, or*

others). How does demand response overlap or complement these other initiatives? Where can management and oversight be leveraged or combined?

- *Factors that affect customer participation in demand response programs and time based rates, and the development of estimates of customer price sensitivity by type and class of customer*

APPA supports further research on improving the design and implementation of time-based rates.

- *Demand Response Assistance Program – The establishment of a program administered by the federal government, and subject to Congressional funding, under which state agencies may apply for specific on-site technical assistance with demand response implementation. For example, federal assistance could be provided to states in developing and implementing new building codes for energy efficiency and demand response. The program administrator would provide appropriate assistance to stakeholders, which might range from referring a caller to a web site, to providing the applicable reference material, to providing on-site technical help (for a day, a week, or longer). The technical help could be provided through a number of avenues, including the following:*
 - *Staff of the federal office administering the program;*
 - *National laboratory staff;*
 - *Funding of travel for lead staff from a state that has successfully implemented a particular demand response program to another state developing a similar program;*
 - *A consulting firm administering a federal Demand Response Assistance Program;*
 - *Consulting firms, working as above, specializing in demand response communications and marketing;*
 - *Other knowledgeable individuals.*

Any such program should also be available to public power utilities through either their state or local government. Consideration should given to providing special assistance to smaller utilities that might have fewer internal technical resources.

- *Demand Response Grant Program – The establishment of federally funded demand response grant program. The grant program would be subject to Congressional funding and be weighted toward stakeholder projects that have the best potential for maximum, sustained deployment of demand response. The program could be administered by an appropriate federal agency either directly or through a national laboratory or other entity.*

Any such program should be designed to offer benefits to different types of utilities. The Discussion Draft suggests that funding be weighted toward stakeholder projects that have the best potential for maximum, sustained development of DR. This should include funding for smaller utilities that may have little experience with DR programs, and that

accordingly may need more support and assistance, e.g., assistance with bulk purchases of necessary hardware.

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Addendum to the EISA PURPA Standards Manual

March 9, 2009

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I. Technical Corrections in the American Recovery and Reinvestment Act of 2009 of the PURPA Standards in the Energy Independence and Security Act of 2007

The "American Recovery and Reinvestment Act of 2009" (ARRA), also known as the "Stimulus Bill," corrected mistakes contained in the Energy Independence and Security Act of 2007 (EISA). These mistakes occurred in the sections that added four new standards to the Public Utility Regulatory Policies Act of 1978 ("PURPA"). The relevant EISA sections are in the Appendix of the "Reference Manual and Procedures for Implementation of the 'PURPA Standards' in the Energy Independence and Security Act of 2007" (EISA standards manual), released on August 11, 2008. Section 1 of the EISA standards manual contains a discussion of the errors and implementation impact for state commissions and nonregulated utilities.

The following is the section in the ARRA with the "technical correction:"

SEC. 408. TECHNICAL CORRECTIONS TO PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978. (a) Section 111(d) of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by redesignating paragraph (16) relating to consideration of smart grid investments (added by section 1307(a) of Public Law 110-140) as paragraph (18) and by redesignating paragraph (17) relating to smart grid information (added by section 1308(a) of Public Law 110-140) as paragraph (19).

(b) Subsections (b) and (d) of section 112 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2622) are each amended by striking "(17) through (18)" in each place it appears and inserting "(16) through (19)".

Subsection (a) of this paragraph rennumbers the smart grid standards that were added by section 1307(a) of EISA. The standards in section 532(a) of EISA remain numbered as they were in the 2007 statute. Both of the "smart grid" standards were in section 1307(a) – the second standard (now renumbered as "19") was not in section 1308(a) as stated in the ARRA paragraph (a mistake in the "correction").¹ However, since the paragraph refers to PURPA section 111(d), which was amended by EISA, it should be apparent which standards to renumber. Unfortunately, the erroneous reference in the correction may still cause some confusion.

¹ Section 1308 of EISA is for the "Study of the Effect of Private Wire Laws on the Development of Combined Heat and Power Facilities." There is no PURPA standard in that section of EISA.

The renumbered EISA standards are:

- (16) INTEGRATED RESOURCE PLANNING
- (17) RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENCY INVESTMENTS
- (18) CONSIDERATION OF SMART GRID INVESTMENTS
- (19) SMART GRID INFORMATION

Subsection (b) of the ARRA technical correction deals with section 112(b), "time limitations," and 112(d), "prior state actions." This corrects the problems discussed in section 1 of the EISA standards manual with the numbering of the standard references in those sections. First, the two standards previously labeled as "(16)" did not have a time limit specified. With the correction, state commissions and nonregulated utilities have one year after enactment (which was December 19, 2008) to begin consideration or set a hearing date for consideration and up to two years after enactment (December 19, 2009) to complete their consideration and make a determination on whether or not to adopt the standard for all four EISA standards.²

Second, the ARRA also corrects the two standards labeled "(16)" in EISA that, in effect, had no prior state action waiver since PURPA was amended previously to refer to specific standards and the 2007 statute only amended PURPA for the standards labeled as "(17)" (and a standard "(18)" that did not exist the way the 2007 statute was written). This correction means that states and nonregulated utilities are not required to consider and make a determination on the standards *if* they had previously considered those standards or comparable standards. However, this grandfathering provision of PURPA was also amended by the Energy Policy Act of 2005 (EPAct). When the U.S. Code was revised after EPAct was passed, the phrase in EPAct "before the enactment of this subsection" (section 1251(d)) was interpreted as the actual date of enactment of the 2005 law, or August 8, 2005 (see 16 USCA §2622(d)).³ EISA in 2007 with the ARRA correction, only added the phrase "and paragraphs (16) through (19)" and did not change the specific date or define "enactment date" for PURPA §112(d). ARRA did not address the date either. As a practical matter, if a state or nonregulated utility took prior action before August 8, 2005, the grandfathering provision would apply. Given the way the statute is written, there is a possibility that action taken between August 8, 2005 and December 19, 2007 (EISA's enactment date) would not fall within the grandfathering provision.

² Because of the obvious errors in the statutory language, it was advised in the EISA standards manual to consider all four of the standards in the same time frame as that specified for standards labeled "(17)." State commissions and nonregulated utilities that were following this or a similar assumption are already past the beginning the consideration phase and are in the second phase of deciding whether to adopt the standards or not – or have already determined that a comparable standard has been considered or implemented.

³ As modified by the Office of the Law Revision Counsel of the U.S. House of Representatives. It is not clear if Congress intended to permanently affix the date of enactment of this revised PURPA subsection as the date of the 2005 law. In previous amendments and other subsections, the phrase in the law itself was used, not the specific date of enactment.

II. Discussion of the Section 410(a)(1) Requirements for Grant Qualification in the ARRA

Section 410 of ARRA provides that the grant money authorized by the law is available *"only if the governor of the recipient State notifies the Secretary of Energy in writing that the governor has obtained necessary assurances that each of the following [three requirements] will occur."*⁴ The entire text of Section 410 is at the end of this Addendum; the first requirement in subsection 410(a)(1) is the focus here (this paragraph is shown in italics in the excerpt).⁵

Breaking the paragraph down into two segments, the first states that *"[t]he applicable State regulatory authority will seek to implement, in appropriate proceedings for each electric and gas utility, with respect to which the State regulatory authority has ratemaking authority . . ."* The implication is that the requirements apply to electric and gas utilities that are regulated by the state with respect to ratemaking. It appears, therefore, that this does not apply to nonregulated (non-jurisdictional) utilities in the state. The section requires only that the *"governor has obtained necessary assurances"* that the *"regulatory authority will seek to implement"* the requirements of subpart (a)(1). This language appears to retain considerable state authority and discretion, in the context of their particular regulatory authority.

The second segment of the paragraph requires,

. . . a general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently and that provide timely cost recovery and a timely earnings opportunity for utilities associated with cost-effective measurable and verifiable efficiency savings, in a way that sustains or enhances utility customers' incentives to use energy more efficiently. [ARRA Section 410(a)(1).]

It is significant in terms of legislative construction that the requirement is broadly constructed and does not specifically mandate a particular ratemaking methodology, including "decoupling," which is generally defined as "decoupling revenues or profits from utility sales" in the ratemaking process.⁶ Decoupling is intended to provide recovery of lost revenue from energy efficiency programs, neutralize utility incentives to

⁴ ARRA's § 410(a)(1) conditions apply to the funds authorized for State Energy Efficiency Grants authorized under Part D, Title III of the Energy Policy and Conservation Act (42 USC § 6321 et seq).

⁵ The second requirement concerns the adoption of building codes and the third that the state will "prioritize the grants toward funding energy efficiency and renewable energy programs." All three requirements are shown in the excerpt from ARRA at the end of this Addendum.

⁶ Previous versions of what became the ARRA legislation contained language that the state needed to implement that first two PURPA standards in EISA; that is, adopt standard (16) "Integrated Resource Planning" and standard (17) "Rate Design Modifications to Promote Energy Efficiency Investments" (the complete language of these standards with discussion are in the EISA standards manual). Since Congress dropped this specific language may indicate that Congress intended some leeway in how this paragraph is interpreted.

increase sales, and also reduce possible disincentives to implementing programs that could decrease sales. This ratemaking mechanism is discussed in part 4 of the EISA standards manual.

It is also important to note that section 410(a)(1) of ARRA is different than the PURPA standards in that PURPA standards do not require that state commissions actually implement the relevant standard (as discussed in detail in the EISA standards manual). In the past, the statutory language was neutral as to whether a commission should or should not adopt any particular PURPA standard. This section is different because the legislation requires states to “seek to implement” the policy stated in the paragraph in order to receive the funding. This language may create a presumption that a state commission will take steps to change their ratemaking practices to comply with what they understand the paragraph to require. That the paragraph is ambiguous does not change the fact that commissions are required to do something that they may not have otherwise done. While the “seek to implement” formulation seems to give the commission some ability to say “we tried and failed,” it is of a different character than the PURPA-type “consideration” process.

Decoupling advocates believe that it is necessary to encourage utilities to promote energy efficiency programs, but the concept is not without criticism as well. A major concern is the difficulty of attributing changes in sales directly to utility programs. Another concern is that a decoupling mechanism provides poor incentives for efficient utility operation since it appears to guarantee revenues, irrespective of systemic changes in economic conditions, customer demand, consumption patterns, and other factors that affect revenues. Under traditional cost-based regulatory practice, revenues (and profits) are not guaranteed and the risk of revenue volatility is typically born by the utility. When a utility’s sales or revenues change, rates are adjusted in a rate case where it is considered in the broader context of utility costs and other revenue sources.

While a “decoupling” policy would fit the description of the ARRA paragraph, it clearly is not the only available policy that would conform to this requirement. The question for the regulatory authorities is, when giving assurance to their respective governors, what is *“a general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently . . .”*? If the state has not adopted decoupling, and does not intend to do so, are there alternative policies or regulatory mechanisms that could also fulfill the ARRA requirement? There are several possible alternatives, including:

- More frequent rate cases to reduce regulatory lag in cost recovery.
- Use of a future test year in ratemaking, where costs, sales, and revenues are projected and forward-looking rates to send efficient price signals to customers.
- Rate design methods that limit the recovery of fixed costs in variable charges.
- Utility incentives for efficiency investments, including timely cost recovery for programs, accelerated depreciation for related capital investments, and incentive returns.

Section 410 of the American Recovery and Reinvestment Act of 2009

SEC. 410. ADDITIONAL STATE ENERGY GRANTS. (a) IN GENERAL.—

Amounts appropriated under the heading ``Department of Energy—Energy Programs—Energy Efficiency and Renewable Energy'' in this title shall be available to the Secretary of Energy for making additional grants under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.). The Secretary shall make grants under this section in excess of the base allocation established for a State under regulations issued pursuant to the authorization provided in section 365(f) of such Act only if the governor of the recipient State notifies the Secretary of Energy in writing that the governor has obtained necessary assurances that each of the following will occur:

(1) The applicable State regulatory authority will seek to implement, in appropriate proceedings for each electric and gas utility, with respect to which the State regulatory authority has ratemaking authority, a general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently and that provide timely cost recovery and a timely earnings opportunity for utilities associated with cost-effective measurable and verifiable efficiency savings, in a way that sustains or enhances utility customers' incentives to use energy more efficiently.

(2) The State, or the applicable units of local government that have authority to adopt building codes, will implement the following:

(A) A building energy code (or codes) for residential buildings that meets or exceeds the most recently published International Energy Conservation Code, or achieves equivalent or greater energy savings.

(B) A building energy code (or codes) for commercial buildings throughout the State that meets or exceeds the ANSI/ASHRAE/IESNA Standard 90.1-2007, or achieves equivalent or greater energy savings.

(C) A plan for the jurisdiction achieving compliance with the building energy code or codes described in subparagraphs (A) and (B) within 8 years of the date of enactment of this Act in at least 90 percent of new and renovated residential and commercial building space. Such plan shall include active training and enforcement programs and measurement of the rate of compliance each year.

(3) The State will to the extent practicable prioritize the grants toward funding energy efficiency and renewable energy programs, including—

(A) the expansion of existing energy efficiency programs approved by the State or the appropriate regulatory authority, including energy efficiency retrofits of buildings and industrial facilities, that are funded—

(i) by the State; or

(ii) through rates under the oversight of the applicable regulatory authority, to the extent applicable;

(B) the expansion of existing programs, approved by the State or the appropriate regulatory authority, to support

renewable energy projects and deployment activities, including programs operated by entities which have the authority and capability to manage and distribute grants, loans, performance incentives, and other forms of financial assistance; and

(C) cooperation and joint activities between States to advance more efficient and effective use of this funding to support the priorities described in this paragraph.

(b) STATE MATCH.—The State cost share requirement under the item relating to "Department of Energy; Energy Conservation" in title II of the Department of the Interior and Related Agencies Appropriations Act, 1985 (42 U.S.C. 6323a; 98 Stat. 1861) shall not apply to assistance provided under this section.

(c) EQUIPMENT AND MATERIALS FOR ENERGY EFFICIENCY MEASURES AND RENEWABLE ENERGY MEASURES.—No limitation on the percentage of funding that may be used for the purchase and installation of equipment and materials for energy efficiency measures and renewable energy measures under grants provided under part D of title III of the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.) shall apply to assistance provided under this section.